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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/526,149	05/16/2005	Reinhard Schneider	B-7229	6228

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EXAMINER	
BELL, BRUCE F	

ART UNIT	PAPER NUMBER
1795	

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08/14/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/526,149	SCHNEIDER ET AL.	
	Examiner	Art Unit	
	Bruce F. Bell	1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-54* is/are pending in the application.

4a) Of the above claim(s) *26-41 and 45-52* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-18,23-25,42-46,53 and 54* is/are rejected.

7)☒ Claim(s) *19-22* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *28 February 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *5/18/09*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 2, 4-10, 12, 53, 54 are rejected under 35 U.S.C. 102(b) as being anticipated by Kumar et al (6299745).

Kumar et al disclose a rack for holding a flexible substrate panel, the rack having a plurality of clamps for providing current to a panel clamped to the rack, the clams being positioned to uniformly distribute current to the substrate. Seven clamps are used to hold a flexible substrate panel bearing a copper seed or other conductive layer in place on the rack wherein one tautens the substrate while attaching the clamps so as to clamp the substrate in a wrinkle free manner. The seven clamps are arranged with 3 clamps on each of the left and right sides and one clamp on the bottom, the clamps making electrical contact with conductive layers of both the front and back surfaces of the substrate panel. The arrangement of the clamps provides adequate support to the substrate, provides for a good and uniform current distribution on the substrate and allows a relatively layer large amount of current to flow through the panel without burning off the conductive/seed layers. The rack has a spring clamp biased open and uses a thumbscrew that tightens against a surface of the clamp to force it against the

spring into a closed position to clamp the substrate. The use of such spring clamp prevents the rotating pressure point contact with a thumbscrew causes. See abstract. Clamps 110-170 are shown to clamp the substrate 50. The arrangement of the clamps provides adequate support to the substrate 50 and provides for good and uniform current distribution and allows a large amount of current to flow through the substrate 50 without burning off the conductive layers. See col. 2, lines 9-25. A frame 190 having a rectangular tubular frame is shown, with two sides of the frame having conductors to transfer current to the clamps. A spring clamp 111 comprises two jaws 113 and 114 biased open wherein a thumbscrew 112 is tightened against one moving jaw 113 to force it against its bias into a closed, clamping position wherein the substrate is sandwiched between and held by the jaws 113 and 114. The use of the thumb screw to close the spring clamp rather than having the screw itself contact the substrate prevents the rotating pressure point of the thumbscrew from damaging the substrate. See col. 2, lines 35-43. Frame 190 and substantial portions of the clamps of 110-170 are covered by a protective, non-conductive coating to minimize plate build up on the rack 100. It is preferred that the only uncoated portions be the conductive surface 116 of jaw 113 and the conductive surface 115 of jaw 114 which electrically contact the substrate. Conductive surface 115 is preferred to be substantially parallel to the plane formed by a substrate panel clamped into the rack. See col. 2, lines 44-53.

The prior art of Kumar et al anticipates the applicants instant invention as instantly claimed in the claims as presented with respect to the disclosure of Kumar et al above. Kumar et al sets forth a rack with a frame to which the clamps are mounted

which clamps electrically connect the edges of each side of the substrate to a current supply with the jaws 113 and 114 being the contact strips that contact and hold the substrate on opposing side edges and the entire rack with frame and clips is stationed within the treatment tank during the processing of the substrate. Therefore, the prior art of Kumar et al anticipates the applicants instant claims as set forth.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 3, 11, 13-18, 23-25, 42-46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kumar et al (6299745) in combination with Van Gent (NL 1021165 equivalent to U.S. Paten No. 7534329), Hosten (4898657) and Geissler et al (6238529).

Kumar et al is as disclosed above in the 35 USC 102(b) rejection.

Kumar et al does not disclose that the frame includes one stationary and one moveable frame wherein the moveable frame is guided so as to move towards or away from each other so as to removably clamp the work piece between the frames.

Van Gent discloses a frame for holding a sheet material taut and comprises a support as well as two legs which extend parallel to one another transversely from the support, on which legs fixing elements are provided for fixing, one of the opposing edges of a piece of sheet material thereto. At least one of the legs can be moved along

the support towards and away from the other leg. See abstract of Patent '329. The frame includes a support 1 of an I beam and two legs 2, 3 that extend laterally parallel to one another. The leg 2 is fixed by means of a bolted joint 6 to the I-shaped beam. The other leg 5 is supported by means of a trolley 7, which has wheels 8, that can mobbed along the support. The rollers each bear on one of the flanges 9, 10 of the I-beam. See col. 2, lines 25-34. The beams of the supports 2, 3 each have clamps 11, by which the sheet can be clamped. The clamps 11 also have electrical contacts so that a voltage can be applied to the taut sheet. See col. 2, lines 35-38. During electrolytic treatment of the sheet, the sheet will remain taut since the sheet is under tensile pretension between the legs 2, 3. See col. 2, lines 39-42.

Hosten and Geissler et al are as disclosed in the previous office action.

The subject matter as a whole would have been obvious to one of ordinary skill in the art at the time the instant invention was made because even though the prior art of Kumar et al does not disclose the use of a rack having a moveable and fixed frames that extend parallel to one another to fix the substrate in place, the prior art of VanGent shows that this concept is known for use to hold a substrate taut in electrolytic applications and since Kumar et al shows that their rack holds the substrate in a wrinkle free manner, it appears that one of ordinary skill in the art would recognize that keeping the sheet or substrate in a taut manner is a problem in the art which both Kumar et al and Van Gent have solved with their instant inventions. Therefore, one of ordinary skill in the art would use the concept of Van Gent to hold the substrate in such a manner using the clamping mechanisms of Kumar et al to hold the substrate is a stable manner

when inserted in an electroplating tank. The prior art of Hosten and Geissler et al have been added to show that the use of counter electrodes (anode) is known in the art to be placed on the frame of electroplating racks so as to control the current density being applied to the substrate during the electrolytic treatment and that circuit boards (wafers or substrates) are known to be guided into tanks using either horizontal or vertical orientation and that one of ordinary skill in the art would have the ability to construct the tanks and conveyor systems accordingly. Therefore, the prior art of Kumar et al in combination with Van Gent, Hosten and Geissler et al render the applicants instant invention as obvious.

Allowable Subject Matter

5. Claims 19-22 are allowable over the prior art of record.

6. The following is a statement of reasons for the indication of allowable subject matter: The prior art of record fails to teach and/or disclose the use of a cover that mounts to a supporting frame and /or contacting frames so that the over and the work piece form a closed compartment.

7. Claims 19-22 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

8. Applicant's arguments with respect to claims 1-4, 8-18, 23-25 and 42-46 under 35 USC 102(b) to Hosten have been considered but are moot in view of the new ground(s) of rejection.

Applicants arguments of the above claims have been considered by the examiner and since the prior art of record fails to teach an opposing set of contact strips on each side of the substrate, a new rejection showing such structure has been made. The examiner does however, like to point out that it appears that whether one side or both sides of a substrate are contacted on their edge component would be within the ability of the person having ordinary skill in the art and would be dependent upon the size of the substrate being utilized and needing to be supported in the processing tank. Further, applicant argues that the electrolytic apparatus cited by the examiner is of horizontal construction and the applicants is a vertical tank however, the examiner would like to point out that the applicants instant claims make no reference to the vertical construction and are attempting to claim a feature not present in the claims. One can read the claims with respect to the specification but the limitations can not be read into the claims. Applicant also further states that the contact strips are designed to remain in the treatment tank, however, the claims are not commensurate in scope with applicants arguments as can be seen by the phrase "and being stationed within the treatment tank". Does this mean "always" or "only during the electrolytic treatment"? It appears that the contact strips would have to be "permanently" stationed in the tank but that is not how applicants instant claim has been presented. Further, the examiner has

not looked at the specification to ensure that the instant specification provides support for permanently, therefore, if this is what applicants are intending, then applicants should ensure that they have adequate support in their instant specification for this concept. For purposes of this examination, the examiner has construed the clamps as being the contact strips.

Applicants arguments with respect to the rejection of claims under 35 USC 102(b) with respect to both Geissler et al and Blasing et al have also been dropped with respect to applicants arguments with respect to the substrate being connected to contact strips on both opposing edges.

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bruce F. Bell whose telephone number is 571-272-1296. The examiner can normally be reached on Monday-Friday 6:30 AM - 3:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on 571 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

BFB
August 12, 2009

/Bruce F. Bell/
Primary Examiner, Art Unit 1795